



DEPARTMENT OF THE AIR FORCE
59TH MEDICAL WING (AETC)
JOINT BASE SAN ANTONIO - LACKLAND TEXAS



31 JULY 2017

MEMORANDUM FOR SVGT
ATTN: CAPT DEVIN R BROADWATER

FROM: 59 MDW/SGVU

SUBJECT: Professional Presentation Approval

Your paper, entitled **Clinicopathologic Features and Clinical Outcome in Secondary Histiocytic Sarcomas, an Institutional Experience** presented at/published to **College of American Pathology Archives, College of American Pathology Annual Meeting 2017, Washington D.C. Oct. 8-11 2017** in accordance with MDWI 41-108, has been approved and assigned local file #**17286**.

Pertinent biographic information (name of author(s) title, etc.) has been entered into our computer file. Please advise us (by phone or mail) that your presentation was given. At that time, we will need the date (month, day and year) along with the location of your presentation. It is important to update this information so that we can provide quality support for you, your department, and the Medical Center commander. This information is used to document the scholarly activities of our professional staff and students, which is an essential component of Wilford Hall Ambulatory Surgical Center (WHASC) internship and residency programs.

Please know that if you are a Graduate Health Sciences Education student and your department has told you they cannot fund your publication, the 59th Clinical Research Division may pay for your basic journal publishing charges (to include costs for tables and black and white photos). We cannot pay for reprints. If you are a 59 MDW staff member, we can forward your request for funds to the designated Wing POC at the Chief Scientist's Office, Ms. Alice Houy, office phone: 210-292-8029; email address: alice.houy.civ@mail.mil.

Congratulations, and thank you for your efforts and time. Your contributions are vital to the medical mission. We look forward to assisting you in your future publication/presentation efforts.

Linda Steel-Goodwin

LINDA STEEL-GOODWIN, Col, USAF, BSC
Director, Clinical Investigations & Research Support

PROCESSING OF PROFESSIONAL MEDICAL RESEARCH/TECHNICAL PUBLICATIONS/PRESENTATIONS

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Clinicopathologic features and clinical outcomes in secondary histiocytic sarcomas, an institutional experience.

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Context

Histiocytic Sarcoma is an extraordinarily rare neoplasm with very few case reports and case series published in the literature. Currently, the tumor has an unknown etiology and often presents at extranodal sites. Morphologically, the tumor is often a diffuse non-cohesive proliferation of large cells that can be either monomorphic or pleomorphic. These tumors are often diagnosed by immunohistochemistry by establishing histiocytic lineage through CD163 and CD68. Additionally, HS are positive for lysozyme. Cells are typical absent of other histiocytic and dendritic cell neoplasm markers including Langerhans cells (CD1a, langerin), follicular dendritic cells (CD21, CD35), and myeloid cells (CD33, CD13, myeloperoxidase). CD45 may be positive, and S-100 may be focally positive. The undifferentiated morphology and difficult staining pattern leads to poor diagnostic yields. The vast majority of patients die from disease progression.¹⁻² To date there is no optimal treatment regimen for HS, with only a few case reports and occasional case series discussing treatment regimens prescribed with varying degrees of success.³⁻⁸

At present, little has been established for HS. Particularly, while overall survival is known to be low, there is no literature remarking on survival in different populations. In this study, patients with de novo histiocytic sarcomas were compared to patients with secondary histiocytic sarcoma after chemotherapy or radiotherapy.

The purpose of this study was to illustrate demographics on patients with Histiocytic sarcomas, review key immunohistochemical stains to establish diagnosis, and compare de novo to secondary histiocytic sarcoma

Design

- Institutional Review Board approved retrospective study
- Patients with Histiocytic Sarcoma diagnosed and treated at UAB between 1 Jan 2004 and 31 Dec 2016 were identified
- Cases were categorized by primary histiocytic sarcoma and secondary (defined as prior cancer diagnosis and received treatment followed by diagnosis of histiocytic sarcoma)
- Clinical data was gathered through the electronic medical record
- Pathological slides were reviewed for histopathologic, and immunophenotypic data
- Data gathered from identified cases was compared

Results

- 18 cases identified, see Table 1
- Mean age was 57 years (5-84)
- Male:Female ratio was 0.8 (M:8, F:10)
- Five patients had history of prior unrelated malignancy treated with chemotherapy or radiotherapy (Secondary HS) with a mean delay of 33 months between treatment and diagnosis (12 to 60)
- The majority of HS was treated with surgery (83%) followed by chemotherapy (22%)
- The majority of patients received surgery as their only treatment (67%)
- Overall survival was 44 months
- De novo HS overall survival was 64 months compared with 12.8 months of secondary HS [mean survival difference = 51 months (95% CI, 3 to 100), p=0.0386]

Table 1. Patients with new diagnosis of histiocytic sarcoma.

Pt #	Age (Years)/Sex	Location	Prior Therapy	OS (Months)
1	72 / F	Liver	CTX	0
2	84 / M	Larynx	None	23
3	79 / M	Lung	XRT + CTX	39
4	52 / M	Thigh	None	146
5	22 / F	Forearm	None	130
6	79 / F	Leg	None	116
7	66 / F	Breast	XRT	15
8	77 / M	Scalp and adrenal gland	None	3
9	58 / F	Mediastinum	None	9
10	62 / M	Scalp	CTX	8
11	55 / M	Peg tube region	XRT + CTX	1
12	80 / F	Soft palate	None	77
13	5 / F	Orbit	None	79
14	17 / M	Lung	None	79
15	72 / F	Leg	None	27
16	58 / F	Lung	None	28
17	51 / F	Pancreas	None	1
18	34 / M	Left arm, soft tissue	None	6

Abbreviations: Pt = Patient, F = Female, M = Male, CTX = Chemotherapy, XRT = Radiotherapy, OS = Overall Survival

Conclusion

- The clinical presentation of histiocytic sarcoma is often nonspecific and not considered in the clinical differentiation
- Thorough morphologic and immunophenotypic evaluation is warranted to establish an accurate diagnosis, especially use of CD 163 and CD 68 in otherwise unspecific immunohistochemical staining patterns
- Low overall survival in all patients suggest more aggressive management is needed
- The shorter overall survival of secondary histiocytic sarcoma suggest a more aggressive malignancy than de novo disease
- Larger studies are needed to further investigate the biology and genetics of the disease

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Clinicopathologic features and clinical outcomes in secondary histiocytic sarcomas, an institutional experience

Devin Broadwater, M.D.,² Shi Wei, M.D., Ph.D.,¹ Deniz Peker, M.D.¹

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Abstract

Context: Histiocytic sarcomas (HS) are rare, often presenting with undifferentiated morphology and phenotype, resulting in poor diagnostic yield. Once diagnosed, clinical treatments lead to indeterminate outcomes. This institutional experience explores clinicopathologic features of de novo and secondary HS.

Design: A retrospective study was conducted following Institutional Board Review. Clinical, histopathologic, and immunophenotypic data were collected from patients diagnosed and treated at University of Alabama at Birmingham from 2004 to 2016.

Results: There were 18 cases identified. Mean age was 57 years (5 to 84) and male:female ratio was 0.8 (M:8, F:10). The cases included 18 HS (Table 1), five of which with a history of unrelated malignancies treated with chemotherapy or radiotherapy, with a mean delay of 33 months (12 to 60 months). The majority of HS was treated with surgery (62%), followed by chemotherapy (35%), with an overall survival of 44 months. The overall survival of de novo HS was 64 months compared with 12.8 months of secondary HS. The mean survival difference between de novo and secondary HS was significant [51 months (95% CI, 3 to 100), $p=0.0386$].

Conclusion: The shorter overall survival of secondary HS suggests a more aggressive malignancy than de novo disease. Larger scale studies are needed to further investigate the biology and genetics of the disease.

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Table 1. Sample patients with new diagnosis of histiocytic sarcoma.

Pt #	Age (Years)/Sex	Location	Prior Therapy	OS (Months)
1	72 / F	Liver	CTX	0
2	84 / M	Larynx	None	23
3	79 / M	Lung	XRT + CTX	39
4	52 / M	Thigh	None	146
5	22 / F	Forearm	None	130
6	79 / F	Leg	None	116
7	66 / F	Breast	XRT	15
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9	58 / F	Mediastinum	None	9
10	62 / M	Scalp	CTX	8
11	55 / M	Peg tube region	XRT + CTX	1
12	80 / F	Soft palate	None	77
13	5 / F	Orbit	None	79
14	17 / M	Lung	None	79
15	72 / F	Leg	None	27
16	58 / F	Lung	None	28
17	51 / F	Pancreas	None	1
18	34 / M	Left arm, soft tissue	None	6

Abbreviations: Pt = Patient, F= Female, M = Male, CTX = Chemotherapy, XRT = Radiotherapy, OS = Overall Survival